

REMARKS/ARGUMENTS

Applicants respectfully request reconsideration and allowance of this application in view of the amendments above and the following comments.

New claims 58-61 are added.

New claim 58 is supported by Examples 1-12.

With the exception of the last three species, claim 59 is supported by the paragraph bridging pages 6-7 of the specification. The last three species are supported by Examples 2, 7 and 8, respectively.

Claims 60 and 61 are claims 53 and 54, respectively, made independent, except that Applicants have also added the requirements that the colloidal solution excludes organic solvents; and that the colloidal powder is redispersible in a liquid consisting of water in concentrations of up to 0.5 mole of metal per liter of water. Regarding the first requirement, the specification positively states at the end of the first paragraph on page 7 that mixtures of water and organic solvents can be used, if desired; accordingly, Applicants may exclude such organic solvents [see MPEP § 2173.05(i) (“If alternative elements are positively recited in the specification, they may be explicitly excluded in the claims.”)] Regarding the second requirement, Applicants point out that the language is supported by point 6) on page 5 of the specification.

Applicants do not believe that any of the new claims introduce new matter. An early notice to that effect is earnestly solicited.

Applicants also respectfully request that special consideration be given to these new claims.

Claims 21, 23, 24, 26, 27, 29, 30, 32-35, 37, 46, 47, 51, and 53-57 were rejected under 35 USC § 102(b) as being anticipated by or, in the alternative, under 35 USC § 103(a) as being obvious over Moumen et al. (“Moumen”), *Chemical Materials*, 8: 1128-1134 (1996). In response, Applicants point out that Moumen’s colloids are not believed to satisfy the limitations of any of new claims 58-61. With respect to claim 58, Moumen’s colloids include Co and, therefore, all metals are not selected from the recited group required by claim 58. With respect to claim 59, Moumen does not utilize one of the stabilizers required by claim 59. With respect to claims 60 and 61, Moumen’s colloids expressly require the use of organic solvents, namely ethylene glycol, to prevent agglomeration and, thus, the colloidal solution does not comprise metal oxides, stabilizer and water excluding organic solvents, as required by claim 60; nor is the colloidal powder redispersible without agglomeration in a liquid consisting of water. Regarding claim 61, the Examiner comments in the middle of page 9 of the Office Action, without explanation, that “applicants’ limitation to a liquid consisting of water does not exclude the ethylene glycol.” Should the Examiner maintain this position, then Applicants respectfully request that he explain such position in detail. Applicants respectfully submit that the use of the “consisting of” language closes the liquid to the addition of other ingredients besides the specified water and, thus, “a liquid consisting of water” does not embrace a liquid mixture of ethylene glycol + water.

Regarding the remaining claims, Applicant maintain that Moumen’s colloids are redispersible in a mixture of *ethylene glycol and water*, and, therefore, are different than the

instant colloids, which are redispersible in *water alone*. The Examiner countered that there was no evidence that there was no evidence that Moumen's colloids would not be redispersible in water alone. However, Applicants respectfully submit that this can be reasonably inferred based on the evidence of record. Moumen would not have employed a mixture of ethylene glycol and water to stabilize his colloids if he truly believed they could be redispersed in water alone. The Examiner nowhere disputes this position. Applicants believe that the Examiner is well aware of the desire in the art to eliminate the use of organic solvents wherever possible. A person having ordinary skill in the art would be reasonable to conclude that Moumen utilized a combination of ethylene glycol + water because Moumen found that water alone would not work.

Further on this point, Applicants again call the Examiner's attention to another article by Moumen, already of record and appearing in *J. Phys. Chem., 100: 1867-1873 (1996)*. This article discusses Fe/Co mixed oxide nanoparticles in the form of colloids like those discussed in the Moumen reference on which the Examiner relies. In the last paragraph of the Experimental Section II, in the right-hand column on page 1867, the author's state: ***"To prevent agglomeration,*** magnetic particles [i.e., the Fe/Co colloids] are dispersed in *50% of ethylene glycol in water.*" Incidentally, this is the same mix of ethylene glycol and water used in the Moumen reference relied on by the Examiner. Clearly, Moumen's colloids would not be stable in water alone. Thus, Moumen has had to introduce ethylene glycol to provide stabilization, and to prevent agglomeration.

This technique of employing special conditions to stabilize colloids is discussed in the instant specification in the last sentence of the second paragraph on page 1. The agglomeration is undesired because, as stated, this leads to "insoluble metal powders." Accordingly, "stabilizers,

such as ligands, polymers or surfactants are added in most cases,” to avoid such agglomeration. This is what Moumen is doing by introducing ethylene glycol. Moumen expressly teaches that it is necessary to add the ethylene glycol in order to prevent the agglomeration. It follows that without such addition of ethylene glycol, there would be agglomeration. And, of course, without the addition of ethylene glycol, the liquid in which such agglomeration would occur would be water alone. Consequently, it can be fairly deduced from Moumen’s own teachings that his colloids are not redispersible in water alone.

The Examiner calls Applicants’ attention to section V on page 1130 of Moumen. There Moumen teaches that a magnetic precipitate appears and thereafter “[t]he supernatant is removed and replaced by pure bulk aqueous phase.” This is no teaching that Moumen’s magnetic precipitate is redispersible in water alone as required by the rejected claims. The reference to “pure bulk aqueous phase” is a reference to the bulk aqueous phase used to precipitate the magnetic precipitate in the first place. This is not a teaching that the magnetic precipitate is redispersible in water alone. Moreover, even dispersion in pure bulk aqueous phase may not lead to a stable colloidal solution as Moumen still teaches the need to add ethylene glycol in order to prevent agglomeration.

Respectfully, the Examiner cannot read Moumen’s Experimental Section II as standing alone and apart from the remainder of the document. Clearly, this is the basic background for the remainder of the experiments reported in the document, and Moumen quite clearly teaches that “[t]o prevent agglomeration, magnetic particles are dispersed in 50% of ethylene glycol in water.” This means that in the subsequently reported Results, the particles have had to be dispersed in 50% of ethylene glycol in water in order to prevent agglomeration. Otherwise, the

statement in Moumen's Experimental Section II makes no sense, as no experiments are reported there. Clearly, the statement in Section II is a keynote to the remaining Results section, and an indication that the particles discussed therein are, in fact, dispersed in 50% of ethylene glycol in water in order to prevent agglomeration. And, the Examiner offers no plausible alternative why the particles in Section II have been dispersed in 50% of ethylene glycol in water in order to prevent agglomeration, but elsewhere in the document this is not necessary. Respectfully, Moumen's particles are not stable in water alone, as are the instantly claimed colloids, but, instead, must be dispersed in 50% of ethylene glycol + water in order to prevent agglomeration—exactly as Moumen has taught.

In view of the foregoing, Applicants respectfully submit that there is a clear difference between Moumen's materials and what is required by the present claims. Moumen's colloids are not redispersible in a liquid consisting of water, as required by the instant claims. Consequently, Moumen cannot anticipate the instant claims.

On the alternative issue of obviousness, the Examiner appears to imply at the bottom of page 4 of the Office Action that even if Moumen differs from the instant claims, Applicants must nevertheless prove nonobviousness. However, Applicants respectfully disagree. The burden of making a *prima facie* case of obviousness is in the first instant on the Examiner. Applicants have explained above that Moumen's colloids are not redispersible in a liquid consisting of water, as required by the instant claims. When the Examiner accepts that difference, then he can only make out a *prima facie* case of obviousness if he can show that the difference in properties would have been obvious to persons skilled in the art. The Examiner has not made out a case that a person having ordinary skill in the art, given Moumen's teaching of colloids redispersible in

water + ethylene glycol, would have found it obvious, or even been enabled, to make the claimed colloids redispersible in water alone. There is absolutely nothing in Moumen that teaches or suggests to persons skilled in the art how to make the claimed colloids. Consequently, they could not have been *prima facie* obvious in view of Moumen.

The Examiner is exactly right that “[a] compound and all of its properties are generally inseparable.” The ability of the colloids to be redispersible in a given liquid is a property that the Examiner must consider in determining not only anticipation, but also obviousness. As Moumen’s colloids have different redispersibility properties than the instant colloids, they are not identical and, thus, there is no anticipation. Further, the issue of obviousness boils down to the question whether the difference in properties would have been obvious or enabled by the prior art. The Examiner has not pointed to anything in the prior art that teaches or suggests the difference in properties or reveals how such difference in properties can be achieved. In the absence of such teachings or suggestions in the prior art, the prior art cannot render the claimed invention *prima facie* obvious.

In view of the foregoing, Applicants respectfully submit that the Examiner would be fully justified to reconsider and withdraw this rejection. An early notice that this rejection has been reconsidered and withdrawn is earnestly solicited.

Claim 36 was rejected under 35 USC § 103(a) as being obvious over Moumen. In response, Applicants respectfully submit that this rejection was premised on Moumen anticipating and/or rendering obvious the basic aspects of the present invention, which, as explained above, is not, in fact, the case. For the same reasons, Moumen does not render claim

36 obvious. Therefore, Applicants respectfully submit that this rejection should be reconsidered and withdrawn as well.

Claims 21-24, 26-30, 32-35, 37-39, 41, 46-48 and 53 were rejected under 35 USC § 102(b) as being anticipated by or, in the alternative, under 35 USC § 103(a) as being obvious over Bonnemann et al. (“Bonnemann”), WO 96/17685. In response, Applicants point out once again that the Examiner is relying on a theory of inherency, which, in order to be proper, has certain requirements, chief among them “necessity.” Thus, it must necessarily be the case that the Examiner’s theory is correct. It is not sufficient that it is a mere possibility or even a strong possibility. Instead, it must necessarily pass.

It follows that if the Examiner has a theory, but it turns out that there is another reasonable explanation for what the Examiner is interpreting, then there is no inherency because it is not necessarily the case that the Examiner’s theory is correct.

This is such a case. The Examiner theorizes that there must be reduction of oxides occurring in Bonnemann, otherwise there would “exist nothing to be reduced in the reduction step of streaming H₂ for 3 or 4 hours.” However, Applicants have already explained that it is the metal salt that is reduced, not any hypothetical metal oxide.

Indeed, it would be a curious thing for Bonnemann to make an explicit reference to reduction, yet with the intention that this be for an inherently disclosed oxide. If, as the Examiner theorizes, the metal oxide was something that occurred in Bonnemann’s process unknown to them, then why would Bonnemann expressly teach reduction of such unknown material? Obviously, Bonnemann intended to reduce what he thought the material to comprise.

And, what Bonnemann thought the material comprises and, therefore, what is reduced, is the metal salt.

Respectfully, the Examiner's position on inherency is logically strained. More importantly, the Examiner has not responded to Applicants' argument and explained why it is implausible. If Applicants' argument is plausible, then it is not necessarily the case that the Examiner's theory is correct, or that Bonnemann's process inherently reduces metal oxide.

In view of the foregoing, Applicants respectfully request that the Examiner reconsider and withdraw the anticipation aspect of this rejection.

With respect to obviousness, assuming a difference, the Examiner again places the burden on Applicants to prove the difference is nonobvious. However, this skips a step wherein the Examiner must first make out a case that the difference would have been *prima facie* obvious. The Examiner has not made out such a case. Accordingly, the obviousness aspect of this rejection should also be reconsidered and withdrawn.

Claim 44 was rejected under 35 USC § 103(a) as being obvious over Bonnemann further in view of Day et al. ("Day"), US 4,197,187. In response, Applicants respectfully submit that this rejection was premised on Bonnemann anticipating and/or rendering obvious the basic aspects of the present invention, which, as explained above, is not, in fact, the case. For the same reasons, Bonnemann in view of Day does not render claim 44 obvious. Therefore, Applicants respectfully submit that this rejection should be reconsidered and withdrawn as well.

Claims 21-24, 26-30, 32-35, 37-39 and 41 were rejected on the grounds of obviousness-

type double patenting as being unpatentable over claims 1-25 of U.S. Patent No. 6,090,746. In response, Applicants point out that this rejection was premised upon Bonnemann inherently producing metal oxide colloids, which, as discussed above, is not, in fact, the case. Consequently, Applicants believe that the Examiner would be fully justified to reconsider and withdraw this rejection as well.

Claims 27-37, 40, 47, 49 and 51 were provisionally rejected on the ground of obviousness-type double patenting as being unpatentable over claims 1, 3-8 and 10-18 of copending application Serial No. 10/599,434. In response, Applicants respectfully request that this issue be held in abeyance until the claims of one or the other case have been indicated as all being allowable, at which time Applicants will take appropriate action, for example, file a suitable terminal disclaimer, or prove patentable distinctness.

Applicants believe that the foregoing constitutes a bona fide response to all outstanding objections and rejections.

Applicants also believe that this application is in condition for immediate allowance. However, should any issue(s) of a minor nature remain, the Examiner is respectfully requested to telephone the undersigned at telephone number (212) 808-0700 so that the issue(s) might be promptly resolved.

Early and favorable action is earnestly solicited.

Respectfully submitted,

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